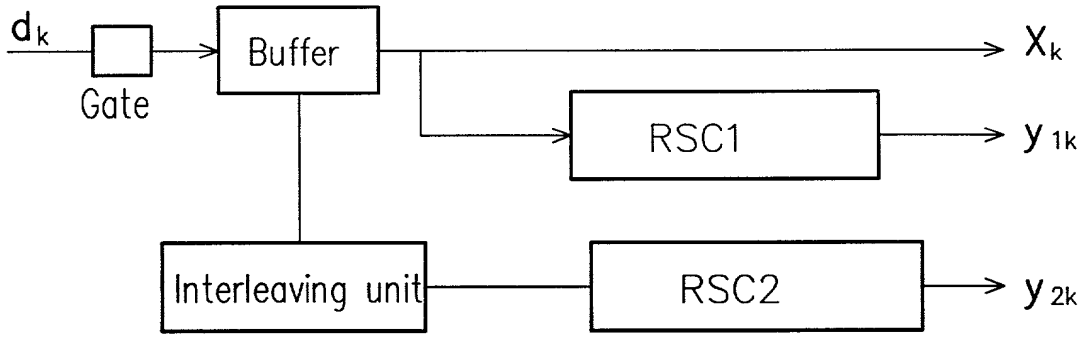
d_k
Gate
Buffer
X_k
RSC1
y_{1k}
Interleaving unit
RSC2
y_{2k}

FIG. 1

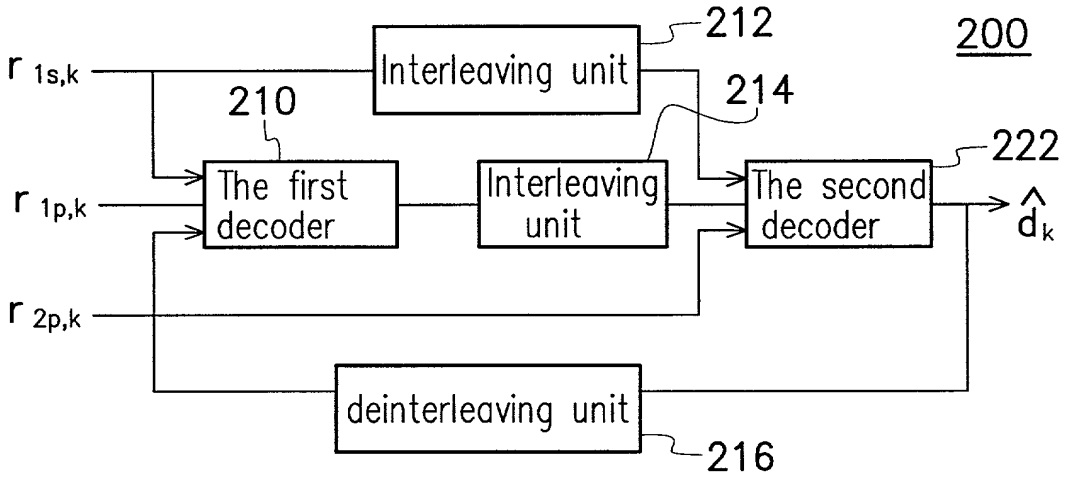
$r_{1s,k}$
$r_{1p,k}$
$r_{2p,k}$
Interleaving unit
212
200
210
214
222
The first decoder
Interleaving unit
The second decoder
$\hat{d}_k$
deinterleaving unit
216

FIG. 2

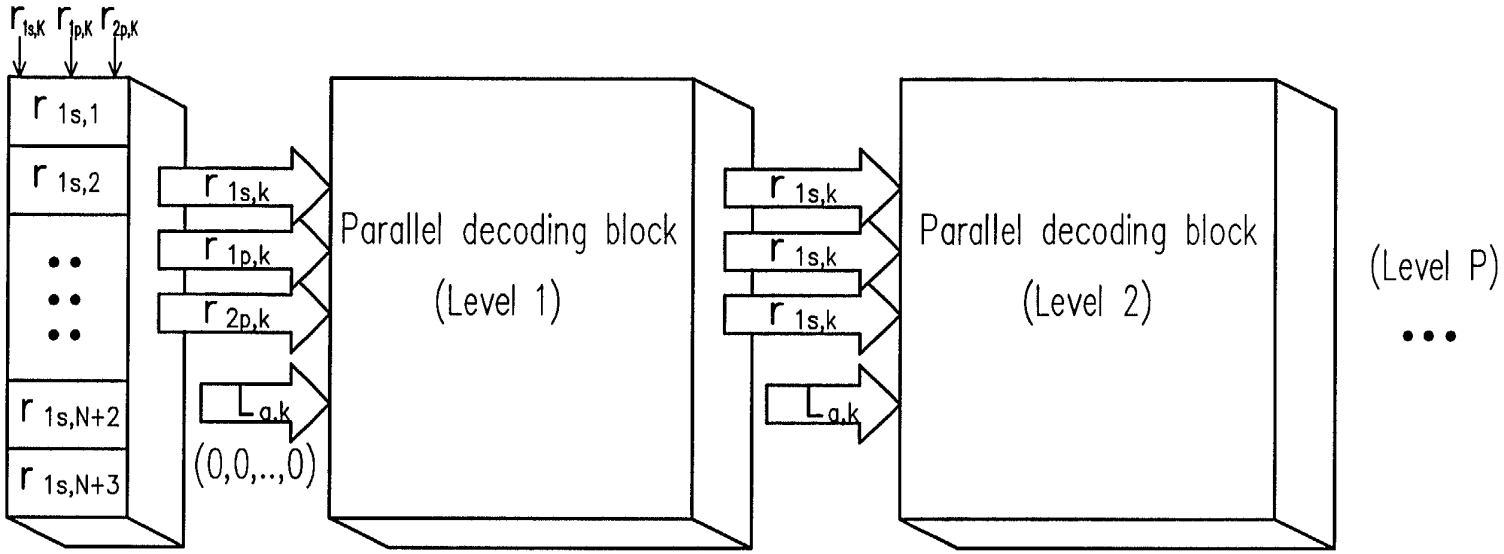

FIG. 3

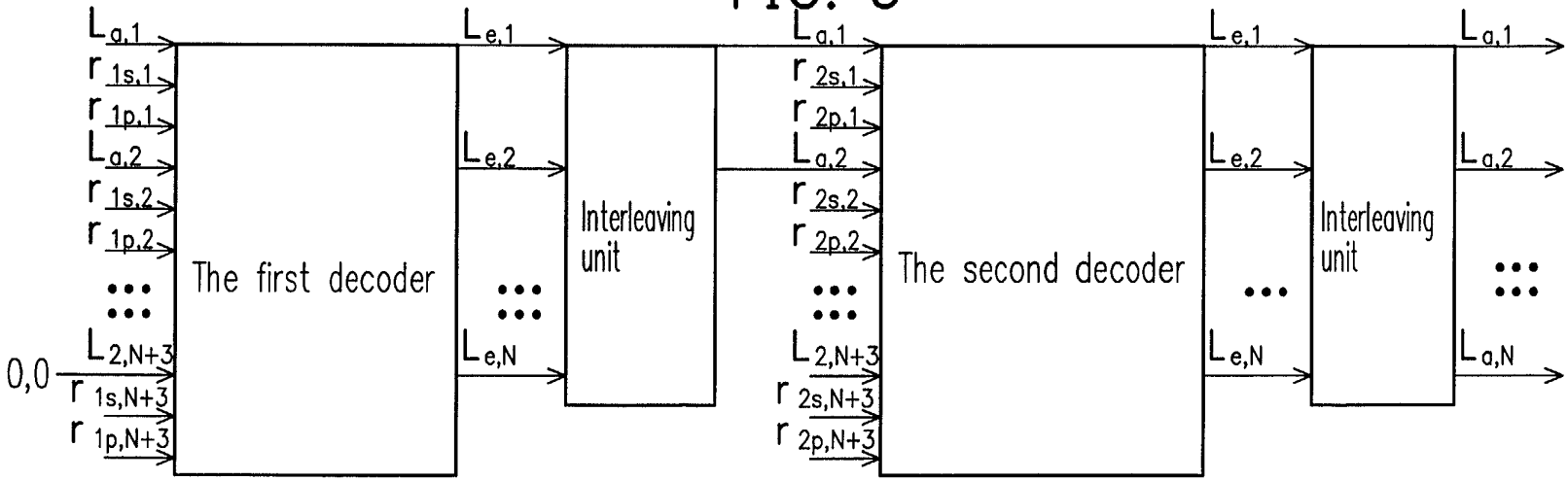

FIG. 4

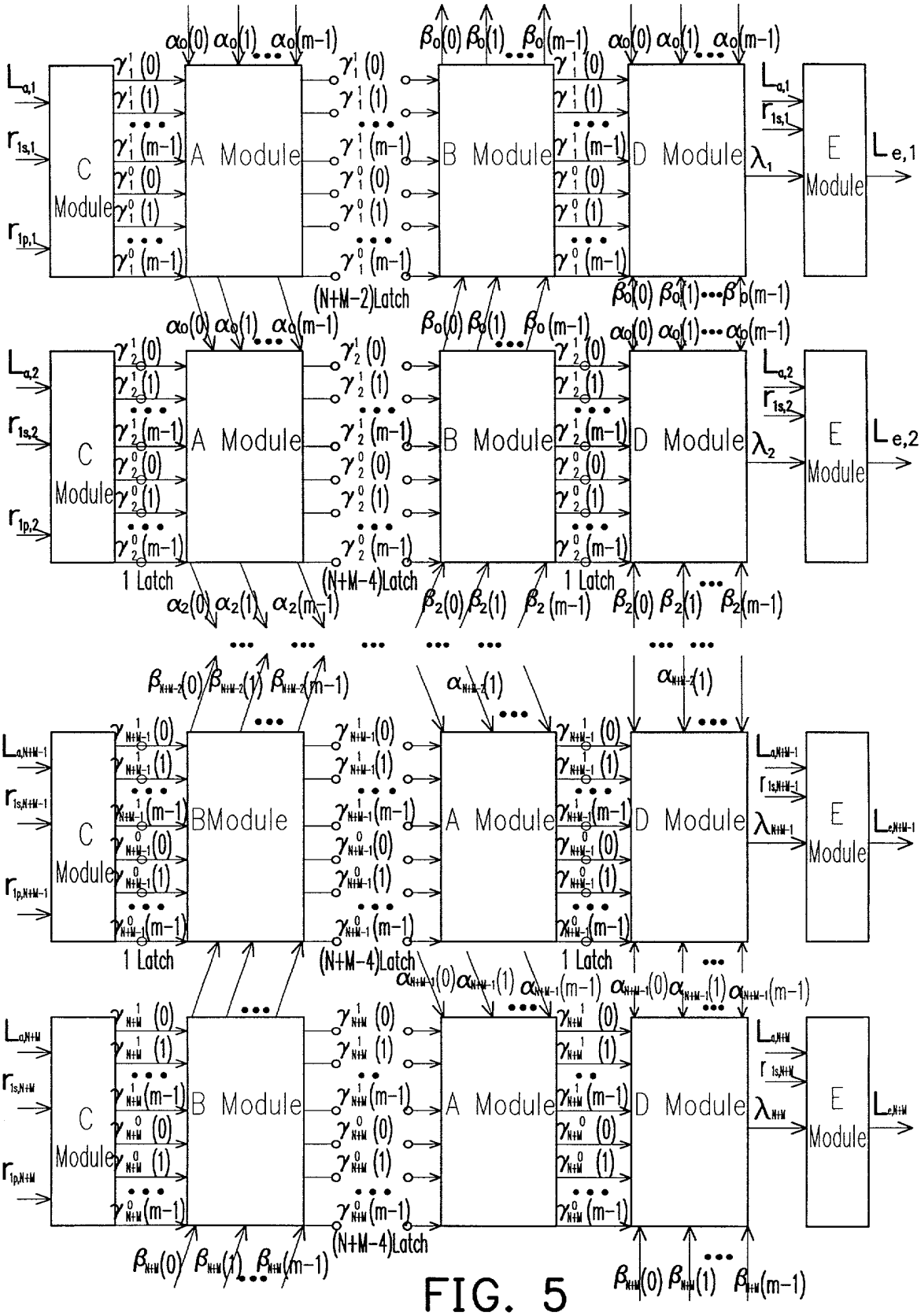
C Module
A Module
B Module
D Module
E Module
BModule
1 Latch
(N+M-2)Latch
(N+M-4)Latch

FIG. 5

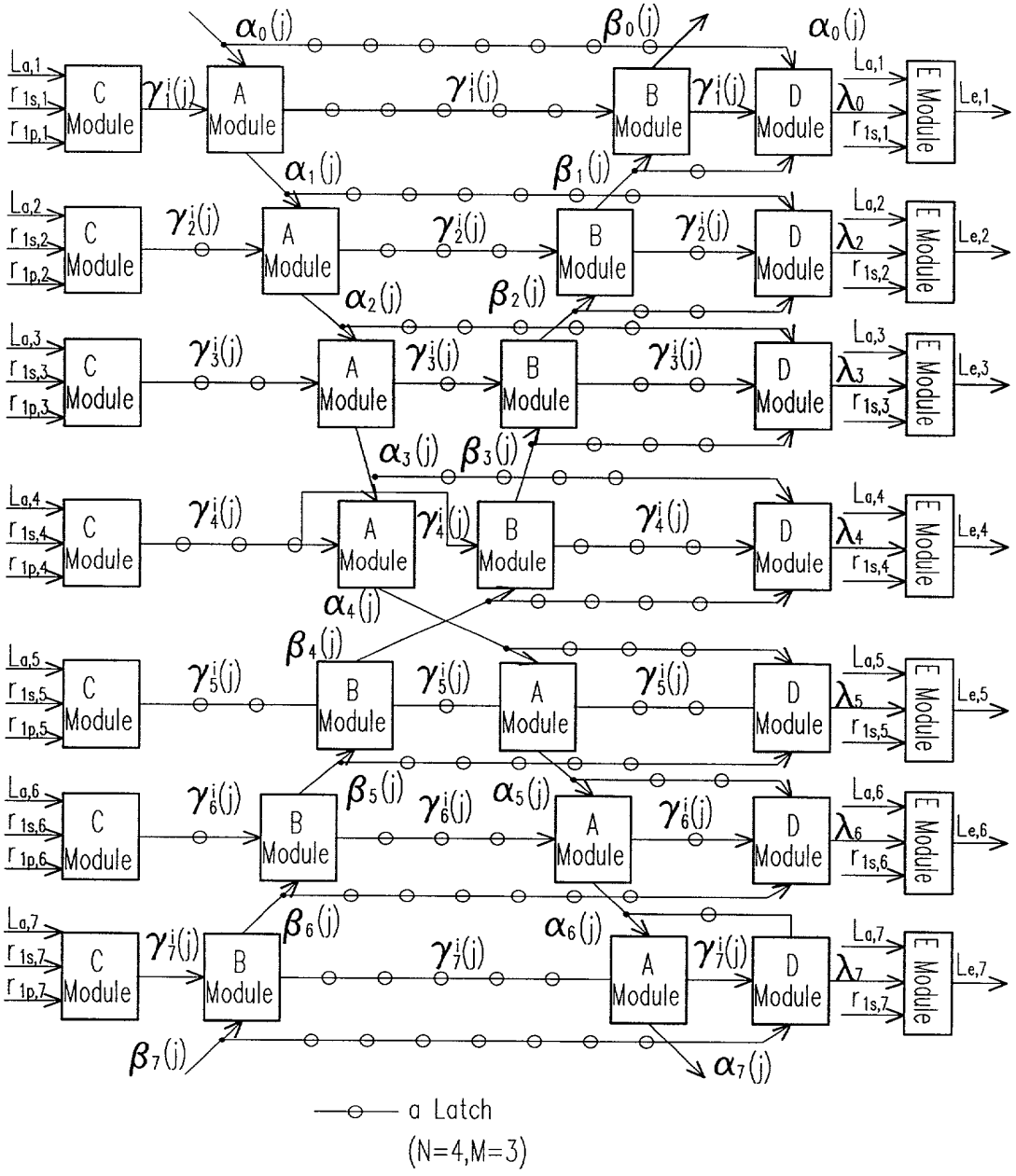

FIG. 6

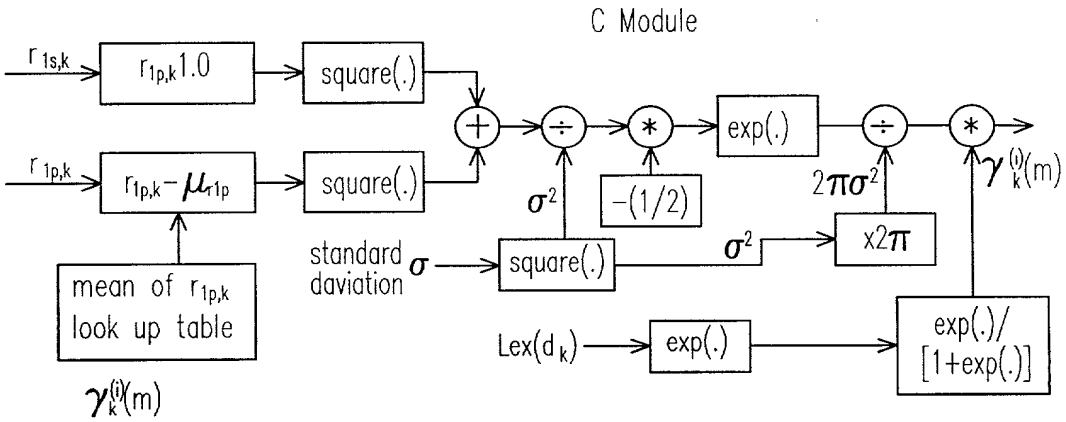
C Module
$r_{1s,k}$
$r_{1p,k}$1.0
square(.)
$r_{1p,k}$
$r_{1p,k}-\mu_{r1p}$
square(.)
mean of $r_{1p,k}$ look up table
$\gamma_k^{(i)}(m)$
σ^2
-(1/2)
exp(.)
$2\pi\sigma^2$
x2π
$\gamma_k^{(i)}(m)$
standard daviation σ
square(.)
σ^2
Lex(d_k)
exp(.)
exp(.)/ [1+exp(.)]

FIG. 7

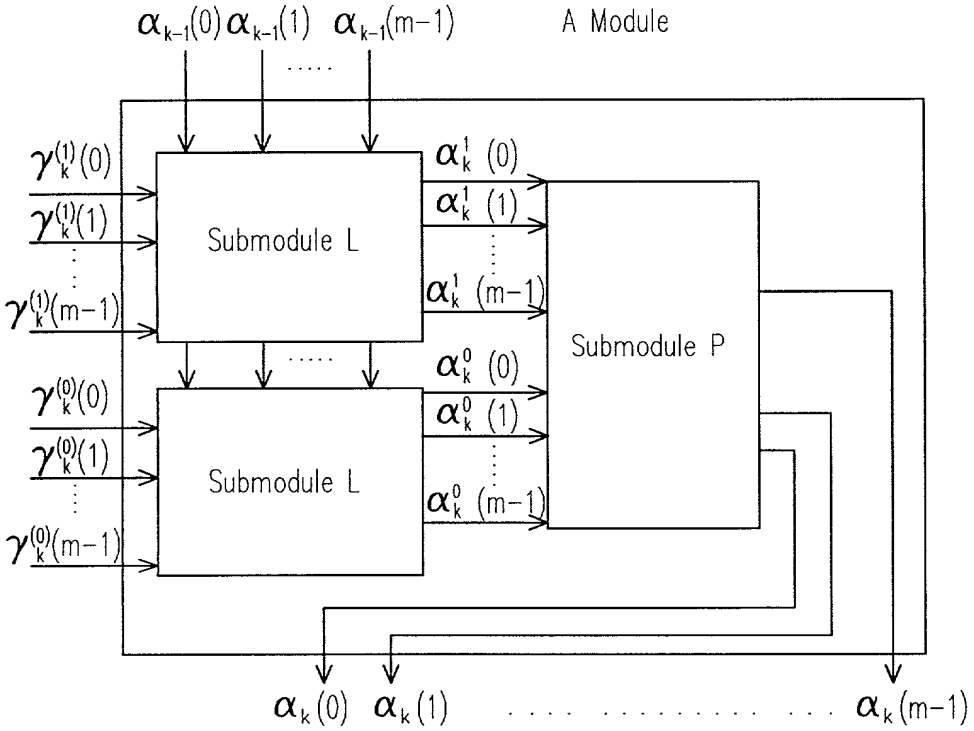
$\alpha_{k-1}(0)$ $\alpha_{k-1}(1)$ $\alpha_{k-1}(m-1)$
A Module
$\gamma_k^{(1)}(0)$
$\gamma_k^{(1)}(1)$
$\gamma_k^{(1)}(m-1)$
Submodule L
$\alpha_k^1(0)$
$\alpha_k^1(1)$
$\alpha_k^1(m-1)$
Submodule P
$\gamma_k^{(0)}(0)$
$\gamma_k^{(0)}(1)$
$\gamma_k^{(0)}(m-1)$
Submodule L
$\alpha_k^0(0)$
$\alpha_k^0(1)$
$\alpha_k^0(m-1)$
$\alpha_k(0)$ $\alpha_k(1)$ $\alpha_k(m-1)$

FIG. 8

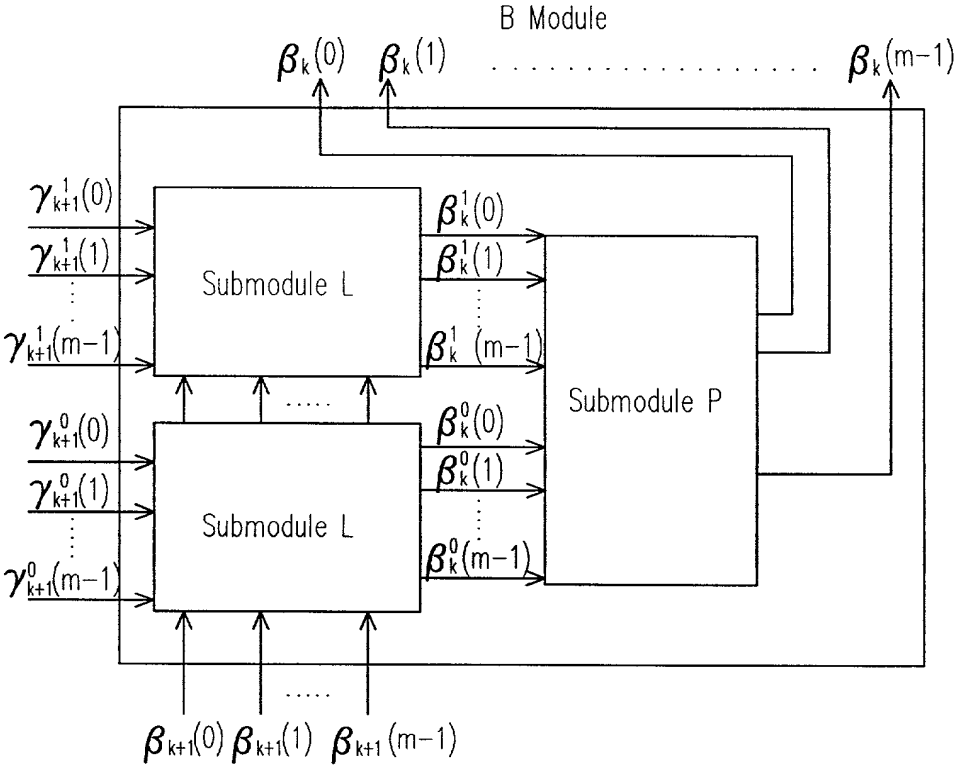

FIG. 9

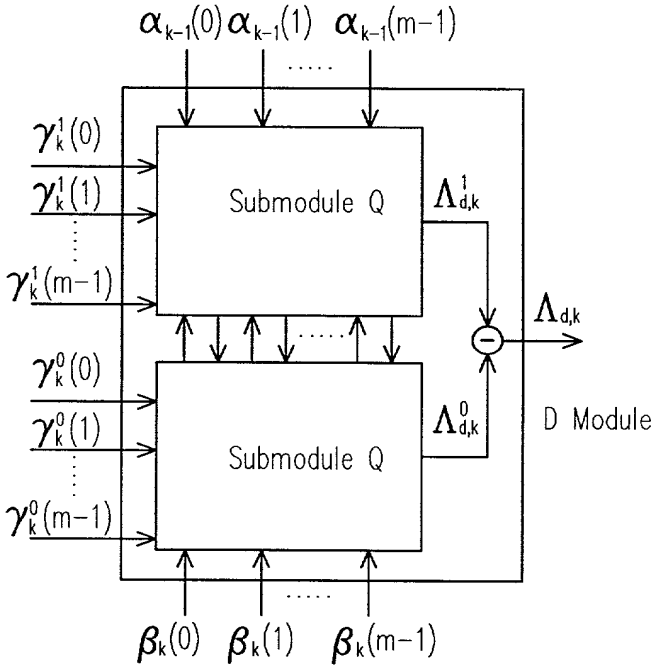

FIG. 10

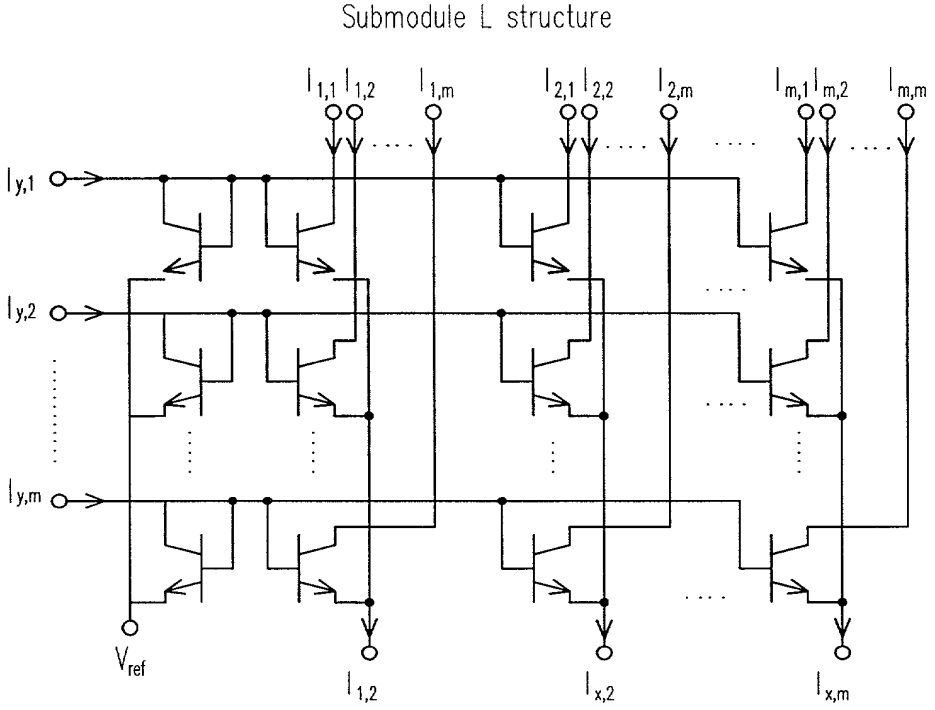
Submodule L structure
I1,1 I1,2 I1,m I2,1 I2,2 I2,m Im,1 Im,2 Im,m
Iy,1
Iy,2
Iy,m
Vref
I1,2
Ix,2
Ix,m

FIG. 11

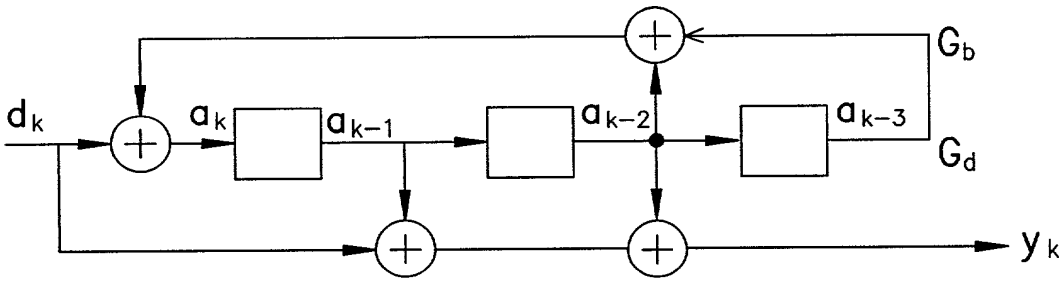

FIG. 12

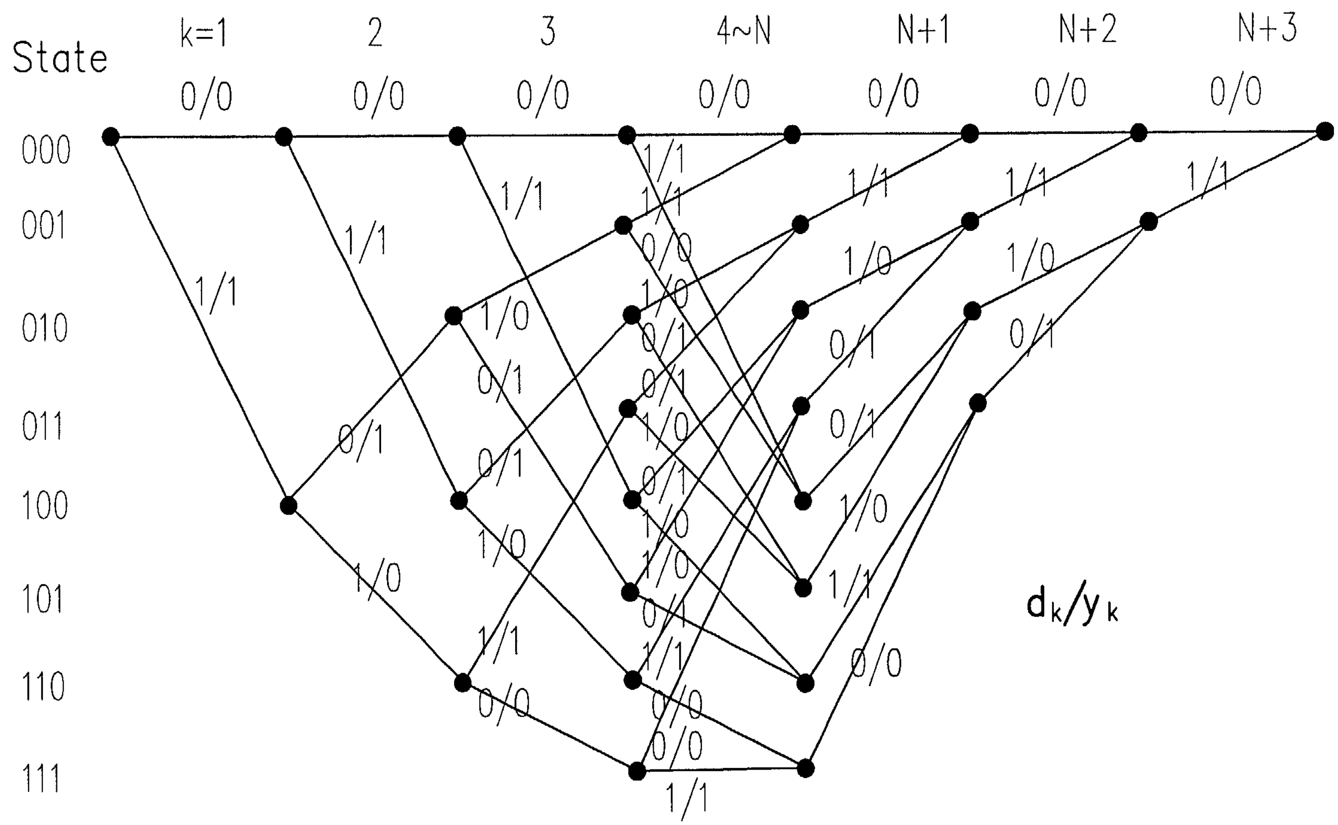

FIG. 13

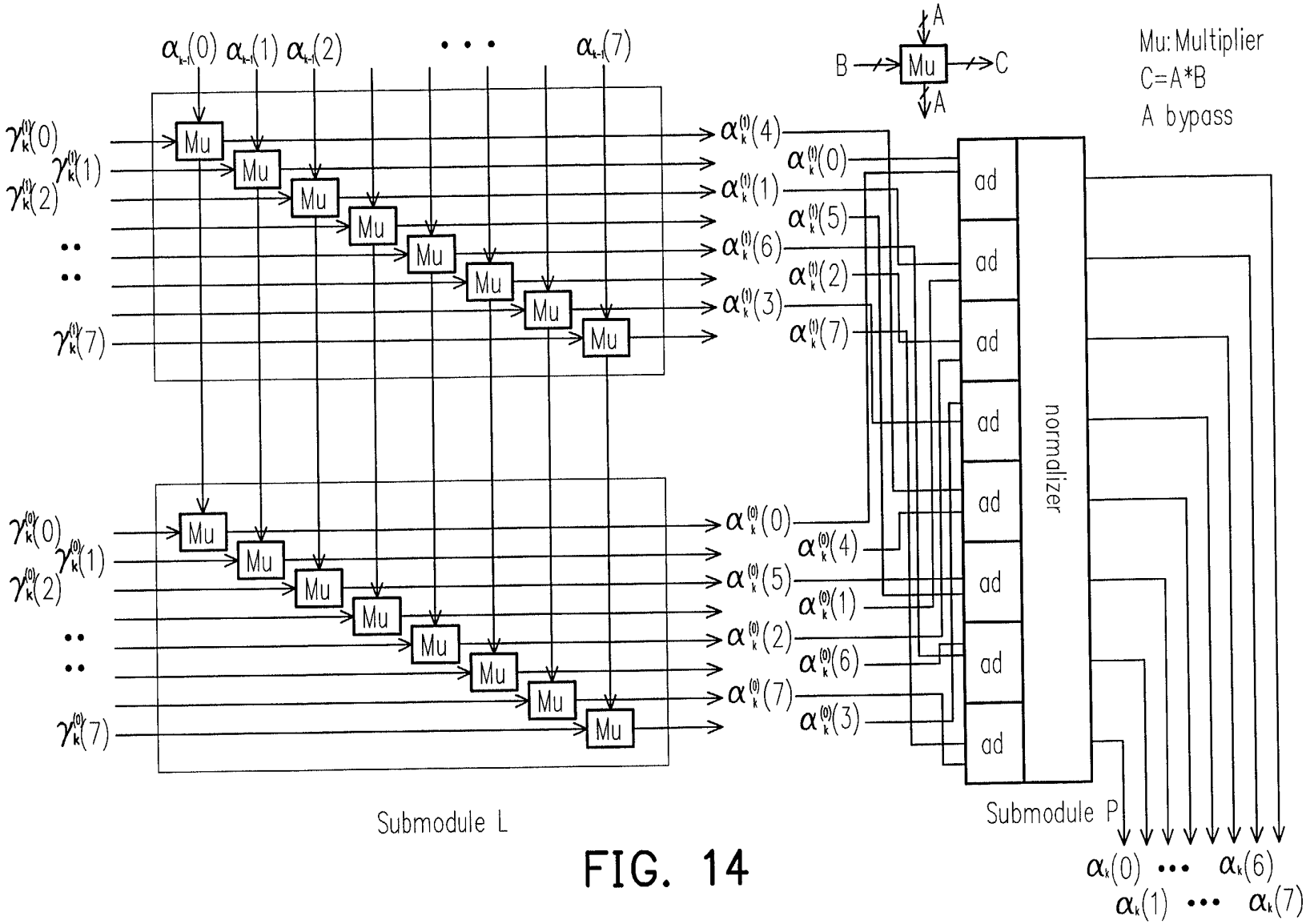

FIG. 14

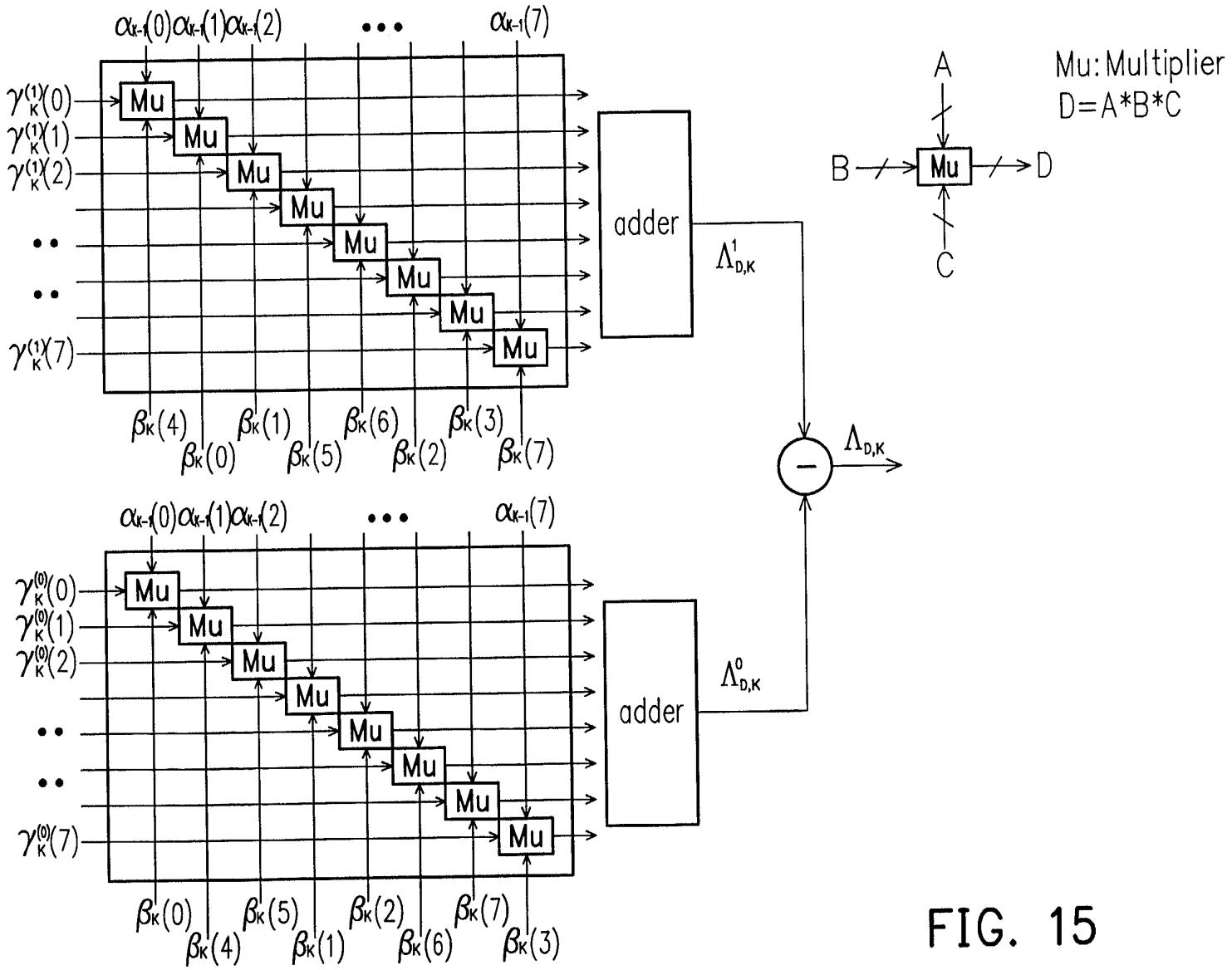

FIG. 15

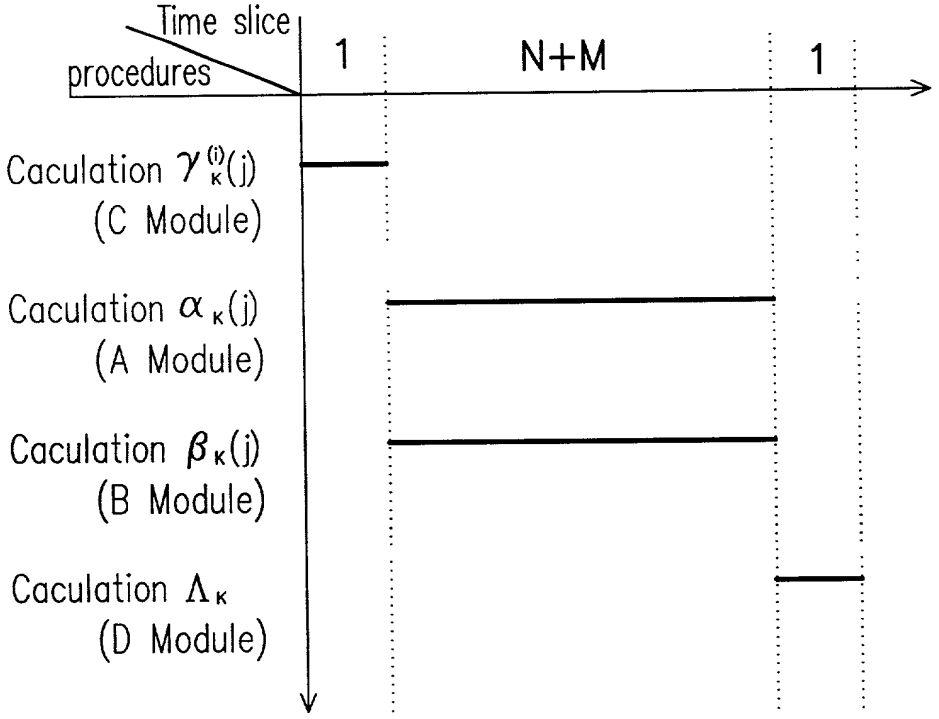
Time slice
procedures
1
N+M
1
Caculation $\gamma_k^{(i)}(j)$
(C Module)
Caculation $\alpha_k(j)$
(A Module)
Caculation $\beta_k(j)$
(B Module)
Caculation Λ_k
(D Module)

FIG. 16

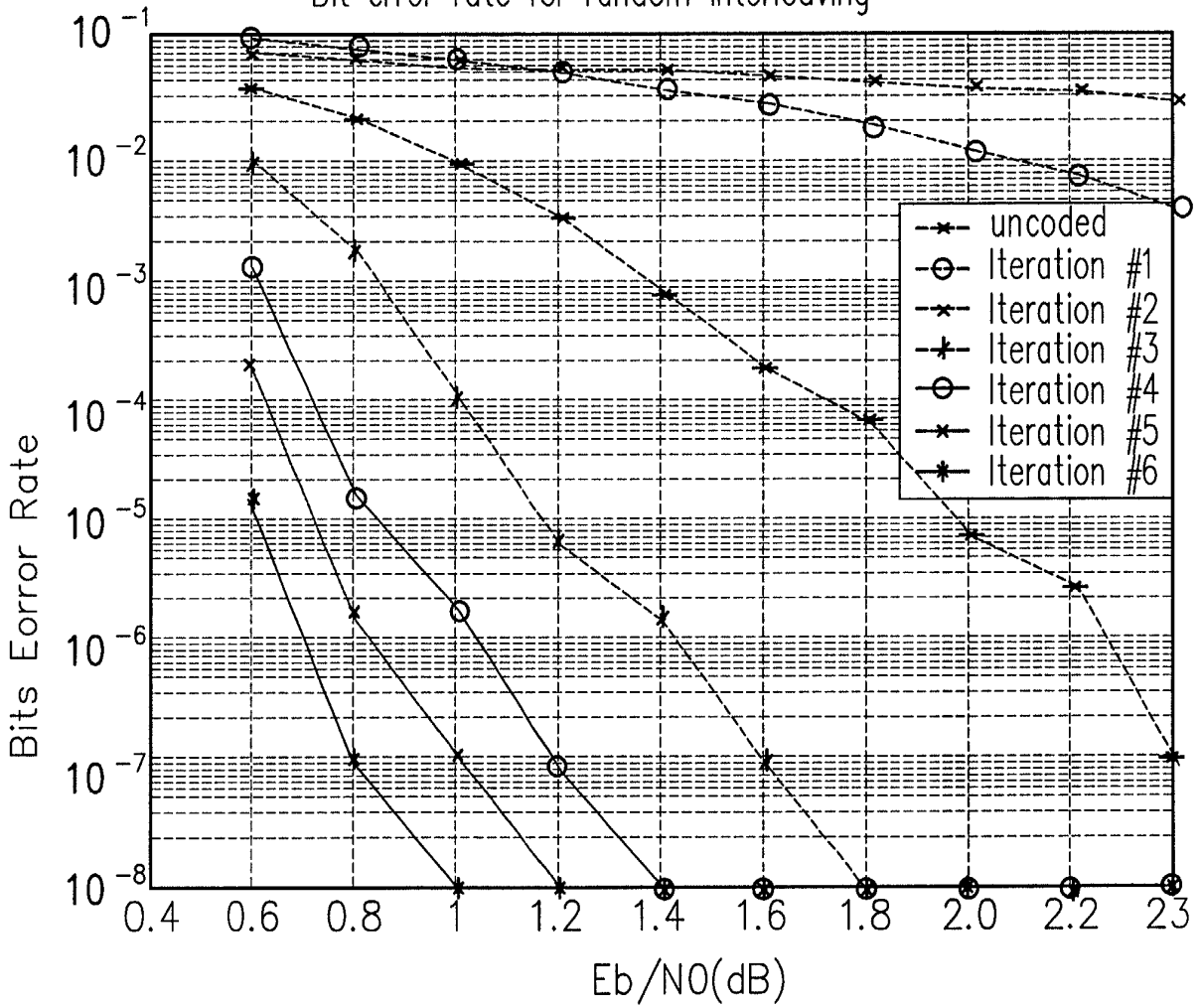
Bit error rate for random interleaving
Bits Eorror Rate
Eb/N0(dB)
uncoded
Iteration #1
Iteration #2
Iteration #3
Iteration #4
Iteration #5
Iteration #6
10^-1
10^-2
10^-3
10^-4
10^-5
10^-6
10^-7
10^-8
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2.0
2.2
23

FIG. 17